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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/610,687	07/01/2003	David P. Workman	7730	2929

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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/610,687

Applicant(s)

WORKMAN ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-13 are pending.

Terminal Disclaimer

1. The terminal disclaimer file December 16, 2005 does not comply with 37 CFR 1.321(b) and/or (c) because: An attorney or agent, not of record, is not authorized to sign a terminal disclaimer in the capacity as an attorney or agent acting in a representative capacity as provided by 37 CFR 1.34 (a). See 37 CFR 1.321(b) and/or (c). Attention is directed to MPEP 402.02, which states that the Office no longer accepts Associate Power of Attorney.

Election/Restrictions

2. This application contains withdrawn claims 8-13 drawn to an invention nonelected with traverse in Paper filed on March 24, 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01. The election was made **without** traverse in the reply filed on March 24, 2005.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 is indefinite since it is unclear how said step of applying an oxide coating differs from the application of aluminum phosphate as a

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agglomerating agents since said treatment would have formed at least some hydrous oxide coating. Attention is directed to the Moore, Jr. et al, US 3,956,171, reference.

Specifically, it is unclear how said step is further applying since said step has been performed regarding aluminum.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lawler et al, US 2,909,451.

Attention is directed to Lawler et al at examples 1, 3, 4, and 5; column 3, lines 70 et seq; column 4, lines 1 et seq, particularly lines 20-27.

Lawler et al (examples 1 and 3) discloses making aluminum phosphates. Lawler et al combines the products of example 1 or 3 (aluminum phosphates) with colloidal silica or titanium hydrous oxide and further discloses (column 4, lines 24-27) the dispersions are combined with colloidal silica and/or titania at the pH instantly claimed. Colloidal oxides are by definition 1 nanometer (millimicron) to less than 1 micron (1,000 nanometers). Lawler et al (column 2, lines 10 et seq) discloses the dispersions have particles of less than 1 micron and individual particles typically aggregate. A particle size of d50(V) of 150 to 900 nm (0.15 to 0.9 microns) would have been inherent to the materials of the Lawler et al reference. Lawler et al (column 3, lines 70-75) discloses the dispersions are stable at pH values between 4 and 10.5, preferably between 5.5 and 8.5 and can be adjusted with sodium hydroxide. Said pH values anticipate those claimed. Lawler et al (example 5) specifically discloses the use of citric acid and sodium phosphate with titanium oxides. The use of citric acid and sodium phosphate with the materials of example 1 would have formed at least some buffering capacity.

The agglomeration of the materials in the Lawler et al compositions would have been inherent to said compositions, which are otherwise the same, i.e., pH, particle

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size, and specified materials.

The claims recite control of the size of the particle agglomerates “by the primary colloidal size, silica concentration, agglomerating agent concentration, and pH adjustment methods”. While said size control may not be explicitly set forth as claimed, size control is clearly exhibited by the same parameters in the Lawler et al reference by the selection of said parameters, which are inherent to the Lawler et al reference. Said limitation does not distinguish the claims.

To the extent Lawler et al differs from the claims in the claimed methods being disclosed in sufficient specificity, Lawler et al clearly contemplates the use of silica alternatively or in combination with titanium oxide treated with the aluminum phosphates at the disclosed pH of 4 to 10.5, preferably 5.5 to 8.5. It would have been obvious to one of ordinary skill in the art at the time of applicants’ invention to modify the process conditions such as pH and concentration is not a patentable modification absent a showing of criticality for a result-effective variable, i.e., a variable which achieves a recognized result.

9. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chapman et al, US 4,711,666.

Chapman et al (column 3, lines 8 et seq; and claims) disclose the combination of nanoparticulate silica having a Na₂O content of 0.45% and a pH of 10.7, with a commercially available mono-aluminum phosphate solution having a P₂O₅ content of 33.7% and a pH of 1. The compositions are characterized as agglomerate/aggregated particles. The particles would have inherently been the same as those claimed since

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they are prepared by substantially the same process and are characterized as agglomerate/aggregate particles.

The step b) of adjusting the pH of the dispersion with mixing to about 3.5 to 8.5 to agglomerate the silica particles would have been inherent to the combination of the nanoparticulate silica of 10.7 and the aluminum phosphate of pH of 1.

The claims recite control of the size of the particle agglomerates "by the primary colloidal size, silica concentration, agglomerating agent concentration, and pH adjustment methods". While said size control may not be explicitly set forth as claimed, size control is clearly exhibited by the same parameters in the Chapman et al reference by the selection of said parameters, which are inherent to the Chapman et al reference. Said limitation does not distinguish the claims.

To the extent the Chapman et al reference differs from the claims in the explicit recitation of the step of adjusting the pH of the dispersion to form the agglomerate/aggregate compositions, Chapman et al discloses the combination of nanoparticulate silica having a pH of 10.7 with a mono-aluminum phosphate solution having a pH of 1. It would have obvious to one having ordinary skill in the art at the time of the invention to vary the concentrations and/or pH as a result thereof when combining the alkaline pH silica sol and the acidic aluminum phosphate for the advantage of providing a protective coating to the silicon carbide within the disclosed molar ratios.

10. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore, Jr. et al, US 3,956,171. Moore, Jr. et al (abstract; column 2 and 3, examples and

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claims) discloses methods of preparing positively charged alumina coated silica sols and the product thereof. Moore, Jr. et al (abstract; column 1, lines 65 and 66; and claims) discloses the addition of phosphoric acid or phosphate salts with basic aluminum salts and silica sols at a preferred (column 2, lines 19-20) pH of 4 to 5.3 to result in a coated silica sol.

The claims recite control of the size of the particle agglomerates "by the primary colloidal size, silica concentration, agglomerating agent concentration, and pH adjustment methods". While said size control may not be explicitly set forth as claimed, size control is clearly exhibited by the same parameters in the Moore, Jr. et al reference by the selection of said parameters, which are inherent to the Moore, Jr. et al reference. Said limitation does not distinguish the claims.

Moore, Jr. et al differs from the claims in the explicit use of an aluminum phosphate salt and the explicit result of agglomerated particles.

The claims do not quantify the degree of agglomeration. Moore, Jr. et al discloses aluminum, phosphate and silica nanoparticles in the compositions at the agglomeration pH claimed. At least some agglomeration of the Moore, Jr. et al sol particles would have occurred as a result of substantially the same conditions of the Moore, Jr. et al reference and those instantly claimed.

It would have obvious to one having ordinary skill in the art at the time of the invention to employ the aluminum phosphate salts as an obvious functional equivalent to the exemplified aluminum species for the purpose of imparting a positive charge to the particles disclosed in the Moore, Jr. et al reference.

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See column 2, lines 40-42 for the silica particle size of 2 nm to 150 nm. Claim 7 is indistinct from the characterization in the Moore, Jr. et al reference (title) of the materials as alumina coated silica. Claim 6 reads on the addition of the phosphates, phosphoric acid, and/or bicarbonate, which would have been expected to buffer at the disclosed pH values.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1-7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 10/880,910. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims encompass the co-pending claims of '910.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

13. Applicant's arguments filed December 16, 2005 have been fully considered but they are not persuasive.

14. Applicants (page 5) assert the Lawler et al reference lacks a teaching of control of the parameters to control the size of the agglomerates. Said control is inherently present in the Lawler et al reference in the selection of the parameters to make the materials.

15. Applicants (page 6) assert the Lawler et al reference employs a colloidal mill to size the particles. Applicants' claims employ open transitional language, i.e., "comprising", and therefore do not exclude a milling step.

16. Applicants (page 6) assert the Lawler et al reference teaches silica as an optional ingredient. This has not been deemed persuasive since the use of silica is specifically mentioned as an embodiment and therefore anticipates and/or provides *prima facie* obviousness.

17. Applicants (page 6) assert the Lawler et al reference teaches the products have use as a soil retardant. It is unclear from applicants' arguments the nexus between the product use and the methods instantly claimed, which have no limitations regarding the products to distinguish said products from the Lawler et al reference.

18. Applicants (page 6) assert the Lawler et al reference does not necessarily include the inclusion of silica. This has not been deemed persuasive since the use of silica is specifically mentioned as an embodiment and therefore anticipates and/or provides *prima facie* obviousness.

19. Applicants (page 7) assert the Chapman et al reference lacks an explicit disclosure of adjusting the pH for control. Said pH adjustment is inherent and/or implicit and the resulting control of the particles size would likewise be inherent and/or implicit. It is noted, the claims lack a single claim with a specific quantitative pH adjustment and a quantitative particle size, which is controlled.

20. Applicants (page 7) assert the Chapman et al reference is designed to provide an oxidation coating for graphite. Applicants' claims employ open transitional language, i.e., "comprising", and therefore do not exclude further ingredients.

21. Applicants (page 8) assert the Moore, Jr et al reference lacks a disclosure or contemplation of the control of the agglomeration in the formation of a stable sol. This has not been deemed persuasive since the Moore, Jr et al reference, which as pointed out by applicants, provides a stable sol. Said sol is provided by "controlling the agglomeration" of the particles. Said agglomeration is inherently present. Said "control" reads on increasing the degree of agglomeration as well as decreasing the degree of agglomeration.

22. Applicants (page 8) assert the several of the parameters asserted by the examiner, as present in the references does not provide basis for inherently processing the features of applicants' invention. This has not been deemed persuasive since no single claim provides quantitative values for said parameters and how any of said parameters control as asserted by applicants to impart patentable distinction. Each of the references teach a primary colloidal particle size, a silica concentration, an

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agglomerating agent concentration, and a pH adjustment whether by the addition of an acid, abase, or the selection of the raw material pH.

23. See section above regarding the Terminal Disclaimer.

Conclusion

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM